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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,737	06/17/2002	Kueck Heinz	SCHO0103	3047

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EXAMINER

BELLAMY, TAMIKO D

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/089,737	Applicant(s) HEINZ ET AL.	
	Examiner Tamiko D. Bellamy	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-36 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 01 April 0402 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 17 is objected to because of the following informalities:
 - a. Line 1, replace "implemented" with -- 1, implemented--.

Appropriate correction is required.

Terminal Disclaimer

2. The terminal disclaimer filed on 3/11/04 disclaiming the terminal portion of any patent granted on this application that would extend beyond the expiration date of 6/664,117 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 14, 17-24, and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brosnihan et al. (6,121,552) in view of Fedder et al. (6,458,615).

Re to claims 1 and 21, Brosnihan et al. discloses in fig. 1 a polymeric body (e.g., substrate 16) including a mechanical active part (e.g. combination of proof mass 24 and flexures 26). As depicted in fig. 1, Brosnihan et al. discloses that a metal layer (e.g., conductive interconnections 36 including a conductive layer 74) connects the microstructure elements in structure region (14) to the circuit region (12) (col. 4, lines 54-

59). Brosnihan et al. also discloses that all of the microstructure elements are fabricated from a device layer (48)(col. 3, lines 46-67). Brosnihan et al. discloses a first polymer material (e.g., device layer 48) and a second polymer material (e.g. sacrificial layer 46) etch using a wet etching (col. 8, lines 6-13). Brosnihan et al. does not specifically disclose that the metal layer partially covers the mechanical part. Fedder et al. discloses in fig. 15 the metallization layers of springs (44) (col. 8, line 57). Therefore, to modify Brosnihan et al. by employing a metal layer on a mechanical part would have been obvious to one of ordinary skill in the art at the time of the invention since Fedder et al. teaches a method of micromachined structure having theses design characteristics. The skilled artisan would be motivated to combine the teachings of Brosnihan et al. and Fedder et al. since Brosnihan et al. states that his invention is applicable to a microfabricated device and Fedder et al. is directed to fabricating a micromachined device.

Re to claim 2, as depicted in fig. 1, Brosnihan et al. discloses a mechanical active part (e.g. combination of proof mass 24 and flexures 26) having a frame.

Re to claim 3, as depicted in figs. 1 and 16B, Brosnihan et al. discloses a metal layer (e.g., conductive interconnections 36 including a conductive layer 74) on a non-active part of the polymeric body (e.g., substrate 16).

Re to claim 4, as depicted in fig. 16B Brosnihan et al. discloses a first polymeric material (e.g., device layer 48) including a metal layer (e.g. conductive layer 74).

Re to claim 5, Brosnihan et al. discloses a proof mass (24) anchored to the sidewalls (22) by flexures (26) to a substrate (16) that includes a first polymeric material (e.g., device layer 48).

Re to claim 6, as depicted in fig. 1, Brosnihan et al. discloses a movable mass (24) and fixed electrodes (30b). Brosnihan et al. discloses that the metal layer (e.g., conductive interconnections (36) that include a conductive layer (74)) connects the fixed electrodes (30b) to the circuit (12). Brosnihan et al. does not specifically disclose that the metal layer partially covers a first and second group of electrodes. Fedder et al. discloses in fig. 15 a first and second group of electrodes (e.g., sensing electrodes 52, 53) including metal layers (18) (col. 8, line 33). Therefore, to modify Brosnihan et al. by employing a metal layer on a first and second group of electrodes would have been obvious to one of ordinary skill in the art at the time of the invention since Fedder et al. teaches a method of micromachined structure having these design characteristics. The skilled artisan would be motivated to combine the teachings of Brosnihan et al. and Fedder et al. since Brosnihan et al. states that his invention is applicable to a microfabricated device and Fedder et al. is directed to fabricating a micromachined device.

Re to claim 7, as depicted in figs. 1 and 16B, Brosnihan et al. discloses in fig. 1 metal layers (36) connecting the micromachined region (14) to a circuit region (14).

Re to claim 8, Brosnihan et al. discloses in fig. 16B a metal layer (e.g., conductive interconnections (36) that includes a conductive layer (74)).

Re to claim 14, as depicted in fig. 1, Brosnihan et al. discloses a circuit region (12) to drive and sense the position of the proof mass (24) (col. 4, lines 38-39).

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Re to claim 17, Brosnihan et al. discloses a micromachined device such as an angular accelerometer.

Re to claim 18, Brosnihan et al. discloses a doped material and an undoped material (see col. 5), and a metal layer such as copper (col. 4, lines 55-59).

Re to claim 19, as depicted in fig. 1, Brosnihan et al. discloses a metal body in a polymeric material.

Re to claim 20, as depicted in figs. 1 and 16B, Brosnihan et al. discloses the mechanically part providing recesses to define spacers.

Re to claims 22 and 23, Brosnihan et al. discloses a metal layer (e.g., combination of a conductive interconnects (36 including a conductive layer 74). Brosnihan et al. inherently uses a chemical vapor deposition and etched to a desired shape (see col. 1).

Re to claim 24, as depicted fig. 1, Brosnihan et al. discloses an auxiliary structure, and applying a potential to the fixed part.

Re to claims 29 and 33, as depicted in figs. 1- 16B, as depicted in fig. 1 inherently uses a method of injection embossing/molding.

Re to claim 30, as depicted in figs. 1- 16B, as depicted in fig. 1 inherently uses a method of injection embossing/molding.

Re to claims 31 and 32, Brosnihan et al. discloses that the metal layer (74) is doped and deposited using deposition gasses; and the deposition is performed at temperatures of 375mTorr (col. 7, lines 50-63)

Re to claim 34, as depicted in fig. 1, Brosnihan et al. discloses the capacitance of the electrode structure (52, 53) by the change in the electrode distance.

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Re to claim 35, as depicted in fig. 1 Brosnihan et al. discloses a recess (20).

Re to claim 36, as depicted in fig. 1 the electrodes have a rectangular shape.

Brosnihan et al. does not disclose that the electrodes have a wavelike shape. However, to change the shape is a design consideration clearly in the preview of one having ordinary skill in the art. Therefore to employ a wavelike shaped electrode would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches its use on a micromachined device that typically has electrodes.

5. Claims 9-13, 15, 16, 25, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brosnihan et al. (6,121,552) in view of Fedder et al. (6,458,615) as applied to claims 1-8, 14, 17-24, and 29-36 above, and further in view of O'Brien et al. (5,392, 650).

Re to claims 9-13, 25-27, the combination of Brosnihan et al. and Fedder et al. include all limitations except for a housing cover and a housing base. As depicted in fig. 8, O'Brien et al. discloses a housing cover (74) and a housing base (76) that has an alignment means, a sealing means; and a bonding the housing cover and base which is equivalent to a snap means (col. 12, lines 63-68, col. 13, lines 1-18). Therefore, to modify the combination of Brosnihan et al. and Fedder et al. by employing a housing cover and base would have been obvious to one of ordinary skill in the art at the time of the invention since O'Brien et al. teaches a micromachined device structure having these design characteristics. The skilled artisan would be motivated to combine the teachings of Brosnihan et al. and O'Brien et al. since Brosnihan et al. states that his invention is applicable to a microfabricated device such as an angular accelerometer and O'Brien et al. is directed to a micromachined accelerometer.

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Re to claim 15, as depicted in fig. 1, Brosnihan et al. discloses a circuit region (12) to drive and sense the position of the proof mass (24) (col. 4, lines 38-39).

Re to claim 16, the combination of Brosnihan et al. and Fedder et al. discloses a polymeric material having a recess including a circuit region (12)(see Brosnihan et al., fig. 1).

Re to claim 28, as depicted in figs. 1- 16B, as depicted in fig. 1 inherently uses a method of injection embossing/molding.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190. The examiner can normally be reached on Mondays, Tuesdays & Fridays 6:30 AM to 3:30PM; and on Wednesdays and Thursdays the examiner 6:30 AM to 11:30 AM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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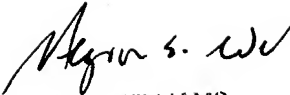
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Tamiko Bellamy

T-B.

May 4, 2004


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